



Additional chart coverage may be found in CATP2, Catalog of Nautical Charts.

SECTOR 14 — CHART INFORMATION

SECTOR 14

HECATE STRAIT—EAST SIDE

Plan.—This sector describes the E side of Hecate Strait from Price Island, at its SE entrance, to Porcher Island, near its NE end. The description also includes those islands, sounds, channels, and passages lying W of the inner reaches discussed in Sector 12. The general descriptive sequence is from S to N.

General Remarks

14.1 Hecate Strait (53°00'N., 130°30'W.) lies between the numerous islands lying close off the mainland of British Columbia and the Queen Charlotte Islands. The strait is about 80 miles wide at its S entrance and gradually narrows to 30 miles at its N end. The depths within the strait decrease from over 200m in the S part to between 7.3m and 36m on Dogfish Bank, which stretches across the N entrance. There are depths of 54 to 109m lying E of this bank. Across the N part of the strait the depths are very irregular.

When navigating the strait, it is advisable to keep on the E side. From the S, the shortest and best route to Chatham Sound is via Edye Passage (54°03'N., 130°34'W.).

Tides—Currents.—At the S end of Hecate Strait, the N current attains a maximum rate of 1 knot at springs, which occurs 5 hours before HW at Prince Rupert. The direction of the current varies between NW and NE. At neaps, the maximum N current occurs 3 hours 30 minutes before HW at Prince Rupert and the maximum S current occurs 3 hours after HW. These currents attain rates of 0.5 knot. In general, the flood current coming in through Dixon Entrance turns SE and meets the flood current coming up from the S in the middle of the strait, at the latitude of Skidegate Inlet.

A change in this general behavior occurs with the season of the year. In winter and spring, the flood currents meet in latitude 53°43'N, but in the late summer from about the middle of July to the middle of September they meet 25 to 30 miles farther S. At springs or during bad weather, the tide rips caused by the meeting of the currents are sometimes so great as to convey an appearance of broken water.

The flood current flowing through Dixon Entrance, on reaching the N end of the strait, divides at a point midway between Rose Spit and Dundas Island. The weaker part of the current sets N past Dundas Island, probably because of the indraft between Portland Canal and the neighboring inlets. The main flood current turns SE into Hecate. In the winter, the flood and ebb currents are very regular here, but in the late summer the flood current greatly exceeds the ebb. In August, the flood may attain a rate of 2.5 to 3 knots with very little appreciable ebb current or only slack water.

These changes in the tidal current are similar to the annual variation in the time of the tides which gives rise to variations in the tidal differences.

Aspect.—Features of possible navigational interest to vessels making a passage through Hecate Strait include a peak, 223m high, rising on Price Island; Mount Johnston, standing near the center of Aristazabal Island; Mount Parizeau, rising

1.5 miles NNW of Mount Johnston; the Musgrave Peaks, standing on the northernmost of the Estavan Group; a peak, 378m high, rising at the SE end of Banks Island; another peak, 213m high, rising at the NW end of Banks Island; Bonilla Island; the summit of Goschen Island; and the peak standing at the S end of the Porcher Peninsula.

Regulations.—The waters described in this sector lie within the Prince Rupert Vessel Traffic Zone. For further information, see General Remarks in [paragraph 11.1](#).

Canadian modifications to 72 COLREGS are applied in waters under Canadian jurisdictions. See Pub. 120, Sailing Directions (Planning Guide) Pacific Ocean and Southeast Asia for further information.

Caution.—Fishing vessels of all types may be encountered in Hecate Strait. The heaviest concentrations, are during the herring fishery in March and during the salmon fishery from May until October.

During an occurrence of a large tidal range, when the barometric pressure difference between the coastal and inland high pressure system drops more than 7 millibars in one day, S sets with rates of 2 to 3 knots may be experienced.

Many islets, above and below-water rocks, small islands, and other dangers lie within about 13 miles of the W sides of the coastal islands located at the E side of Hecate Strait.

Gertrude Rock (52°25'N., 129°23'W.), the outermost danger, lies close off the W side of Aristazabal Island and Ness Rock (52°53'N., 129°44'W.) lies close off the SW side of the Estevan Islands.

McHarg Bank (53°17'N., 130°31'W.) is the outermost danger lying off the W side of Banks Island. It is the closest danger to the coastal track within the limits of this sector.

Hecate Strait—East Side

14.2 McInnes Island (52°16'N., 128°43'W.), wooded and conspicuous, lies on the NE side of the S entrance of Hecate Strait and is marked by a light.

The island is the westernmost of a group of wooded islands and dangers, which extend up to about 2 miles SW of Day Point, at the S extremity of Price Island. A radiobeacon is situated at the light.

Catala Passage leads through the numerous islets and rocks lying between McInnes Island and Price Island. It is narrow, but not too difficult. Linn Rock in line, bearing 118°, with the S extremity of Bray Island, leads about 135m SW of Mould Rock. The passage lying S of Bray Island is about 0.2 mile wide.

Aristazabal Island

14.3 Aristazabal Island (52°40'N., 129°05'W.), lying on the NE side of Hecate Strait, is wooded and indented on its W side. Mount Johnston rises 10 miles NNW of its S extremity.



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McInnes Island Light

This peak is saddle-shaped and conspicuous. Knight Range, a bare ridge of hills, stands near the middle of the island, about 4 miles from the N end. It has four conspicuous peaks, the highest of which is Mount Parizeau. Clifford Bay and Borrowman Bay are two good harbors indenting the island. These harbors are accessible via Beauchemin Channel, which lies between the NW coast and the off-lying islands. This channel joins Caamano Sound to the N of Aristazabal Island.

Lombard Point, located 2 miles NNE of the S extremity of the island, is steep-to and marked by a light. Several islets lie close offshore between the S extremity of the island and this point.

Weeteeam Bay (52°31'N., 129°02'W.), providing summer anchorage, is entered between Ede Island and Colston Islet, 0.4 mile E. The fairway in the entrance has a minimum width of 0.2 mile and a least depth of 12.8m.

Ede Island is 53m high and wooded. Colston Islet is 22m high with some bushes on it. Cummins Islet, lying about 0.5 mile S of Colston Islet, is 11m high, bare, and reddish-brown in color.

Murray Rock lies on the S side of the fairway, about 0.4 mile S of Ede Island.

The Thistleton Islands lie on the W side of the entrance, close NW of Ede Island. Bruce Island, the easternmost, lies 0.3 mile NNE of Ede Island. Digby Rock, with a depth of 8.2m, lies on the W side of the fairway, about 0.2 mile NE of the N end of Ede Island.

Vessels approaching from the S should steer with Rogerson Rock in line, bearing 007°, with Mount Johnston. This leads about 0.7 mile W of Rylatt Rock. Then the S extremity of Ede Island should be steered on, bearing 040°, until the N end of

Cummins Islet bears 100°. The course should then be altered to pass about 0.2 mile SE of Ede Island. Vessels should then steer to pass about 0.2 mile SE of Bruce Islet, clearing Digby Rock. They should then round Bruce Islet at 0.2 mile and set a course for the anchorage.

Anchorage can be obtained by vessels with local knowledge, in depths of 12 to 16.5m, sand, about 0.2 mile N of Bruce Islet. This is a good summer anchorage, but there is a swell with S gales. Vessels should not seek anchorage N of Soar Rock, the drying rock lying farther N, unless they have local knowledge because of the dangers located in the head of the bay.

14.4 Clifford Bay (52°36'N., 129°09'W.) is entered between Howse Island and Dobbs Islets. It extends NE and terminates in a creek with mud flats. The fairway, which is free of dangers, is about 0.2 mile wide and has depths of 21.9 to 40m. Howse Island, conspicuous from the W, is bold on its N side. Dobbs Islets, the tallest of which is 15m high, lie on a drying reef. Craft Island, located 0.5 mile ESE of Howse Island, is 29m high. A rock, with a depth of 3.2m and marked by kelp, lies about 0.1 mile NNE of Craft Island.

Vessels approaching Clifford Bay from the S should pass about 0.5 mile E of the Bowden Islands, on a N heading. When the N end of Howse Island is in line with Mount Johnston, bearing 076°, they should alter course on this range and pass about 0.4 mile N of Hawkins Rock. Vessels should then pass midway between Howse Island and Dobbs Islets, and then steer for the anchorage.

Bowden Islands lie on the W side of the approach to Clifford Bay, about 2.8 miles SW of Howse Island. They are wooded and conspicuous.

Anchorage can be obtained by vessels with local knowledge in depths of 27 to 31m, mud, about 0.3 mile ENE of the N extremity of Howse Island.

Borrowman Bay (52°44'N., 129°18'W.) is entered between Wriglesworth Point and Pearse Point, 1.5 miles N. Turtish Harbor lies on the N side of the head of this bay and Tate Cove lies on the S side. Morison Passage lies between Mesher Rock and the Trickey Islands. The fairway is about 0.3 mile wide and has a least depth of 11.9m. Meiss Passage, lying between the Trickey Islands and Pearse Point, has a least width of 0.2 mile and is deep in the fairway.

Mesher Rock, with a depth of 5m, lies about 0.8 mile N of Wriglesworth Point. Wall Islets, the northernmost of which is 4m high, extend S from Mesher Rock. Wall Rocks lie close W of Wriglesworth Point. Trickey Islands are wooded and surrounded by drying ledges.

Raby Rock, with a depth of 8.7m, and Sehl Rock, with a depth of 10.5m, lie 0.3 mile and 0.5 mile, respectively, E of Mesher Rock.

Anchorage can be obtained by vessels with local knowledge in a depth of 38m, clay, with the N end of Wilks Island bearing 119° and distant 0.2 mile. Small vessels can anchor farther in. Vessels approaching from the S or W should enter via Morison Passage, keeping Fox Point, located on the N side of the creek at the head of Turtish Harbor, bearing 108° and just open N of the N end of Wilks Island. This course will lead N of Mesher, Raby, and Sehl Rocks in a least depth of 13.7m.

Wright Passage

14.5 Wright Passage (52°37'N., 129°26'W.), which is deep and clear of dangers in the fairway, leads E from Hecate Strait into Beauchemin Channel. This passage is about 1.5 miles wide between the dangers extending N from Conroy Island and those extending SW from the Moore Islands.

Willis Passage (52°42'N., 129°27'W.) leads E into Beauchemin Channel from Hecate Strait, N of the Moore Islands. Carter Rocks, Keith Rock, and Richards Shoal, which is marked by kelp, lie on the S side of the passage. Towner Bank, Schram Rocks, Verdier Shoal, and Knarston Rock, which is located at the junction of Willis and Leadman Passages, lie on the N side of the passage.

Vessels proceeding through Willis Passage should keep Mount Parizeau, standing near the N end of Aristazabal Island, bearing 064° and open S of the southernmost of the Anderson Islands. This course leads midway between Keith Rock and Verdier Shoal. When the E extremity of the Moore Islands, which consists of a steep and conspicuous cliff, bears 152°, the course should be altered to 093° in order to pass between Richards Shoal and Knarston Rock and into Beauchemin Channel.

Leadman Passage (52°45'N., 129°25'W.) leads S into Beauchemin Channel from Caamano Sound.

Cliffe Rock (52°50'N., 129°28'W.), Woods Shoal, Lombard Rocks, and Richards Shoal lie on its W side. The Beaven Islands and the Anderson Islands lie on the E side.

Parker Passage, the northernmost channel leading into Beauchemin Channel, lies between the N end of the Anderson Islands and Rennison Island. Laundry Rock, located at the W entrance of this passage, lies on the N side of the fairway.

In Leadman Passage, the flood and ebb currents set N and S, respectively, and attain rates of 2 to 3 knots. The currents change about the time of HW and LW.

Vessels from Caamano Sound approaching Beauchemin Channel via Leadman Passage, should steer from a position located 1.5 miles E of Cliffe Rock for the E extremity of the Moore Islands, bearing 174°. This course leads between Lombard Rocks and the rock, with a depth of 8.7m, lying close E. When the S extremity of the Anderson Islands is abeam, the course should be altered to 135° in order to pass midway between Richards Shoal and Knarston Rock and into Beauchemin Channel.

Beauchemin Channel

14.6 Beauchemin Channel (52°45'N., 129°20'W.) leads S from Caamano Sound along the NW coast of Aristazabal Island. McColl Rock, Hazel Shoal, and Bridgeman Rock lie on its W side and Thurgate Rock, Butler Shoal, and Bonson Rock lie on its E side. Farther to the N, the Anderson Islands, the Tuzo Islands, and Rennison Island lie on its W side. Hicks Island and several dangers, located off Borrowman Bay, lie off its E side.

The tidal currents in this channel set the same as for Leadman Passage.

Estevan Group (53°04'N., 129°40'W.), lying on the NE side Hecate Strait, consists of five large islands, which are separated by narrow passages, and numerous smaller islands. The group lies on the N side of the entrance of Caamano Sound. The four southernmost islands, which are low and deeply indented, are Dewdney, Lotbiniere, Barnard, and Prior Islands. Trutch Island, the northernmost and largest of the group, is separated from the other islands by Langley Passage and Gillespie Channel. Both of these passages are suitable only for small craft with local knowledge.

Several microwave antennas, conspicuous from seaward, stand on the summit of the westernmost of the Musgrave Peaks which rises near the center of Trutch Island.

Caution.—Numerous islets, banks, and shoals lie off the W side of the Estevan Group. Cridge Banks, on which lies Cran Shoal, is the outermost of these dangers. MacDonald Island lies about 1 mile off the W coast of Dewdney Island and several shoals are located between these two islands.

Pemberton Bay (52°58'N., 129°36'W.), lying at the S end of Dewdney Island, affords sheltered anchorages for vessels of moderate draft. Gillen Harbor, located at the head of Pemberton Bay, affords shelter from all winds, but should not be entered in a SE gale, except in case of necessity. This bay is entered between the Jacinto Islands and Porter Island, 1.8 miles ENE. A light is shown from the Jacinto Islands. Within the bay, the fairway is generally deep. The passage leading into Gillen Harbor has a least depth of 6.7m and a least width of about 90m.

Shannon and Sage Rocks lie on the E side of the entrance to the bay. Robertson Rock, 8.5m high, lies on the E side of the fairway, about 1.5 miles NNW of Shannon Rock. The bay is encumbered with numerous rocks, most of which dry, to the E of a line joining these two rocks.

Vessels approaching Pemberton Bay from the W should round Jacinto Islands at a distance of 0.3 mile and steer to pass 0.2 mile off Thomson Point, which is low and steep-to. They should then pass 0.2 mile W of Robertson Rock. Approaching the bay from the E, vessels should steer for the entrance of the narrow passage leading to Gillen Harbor and pass about 0.2 mile W of Robertson Rock.

Vessels bound for Gillen Harbor should keep a mid-channel course until about 0.3 mile S of the **Peatt Islets** (52°59'N., 129°36'W.). They should then keep close to the E shore in order to avoid the 3.7m rock lying in mid-channel. Vessels may then pass about 35m W of the 1.2m rock lying on the W side of the Peatt Islets.

Anchorage may be obtained by vessels in good weather in a depth of 38m, sand and shells, about 0.2 mile W of Robertson Rock. Anchorage may also be obtained by small craft in a depth of 7m, mud, in the middle of Gillen Harbor.

14.7 Oswald Bay (53°01'N., 129°40'W.), lying on the SW side of the Estevan Group, is entered between Le Jeune Point and a steep-to point, 2 miles N. This bay is encumbered with islets and rocks in its N part.

Murray Anchorage affords good shelter to small craft with local knowledge, but foul ground extends about 0.5 mile W from the E entrance point of this anchorage.

A radiobeacon is situated at the N entrance point of Oswald Bay.

Bland Rocks, the southeasternmost and highest of which dries 3.7m, lie off the entrance to Oswald Bay and between 1 mile and 2 miles NW of Le Jeune Point. Numerous rocks, above and below-water, lie between Bland Rocks and the N entrance point of Oswald Bay.

Banks Island (53°25'N., 130°10'W.), lying on the NE side of Hecate Strait, is wooded and comparatively low along its SW side. It has numerous indentations and inlets, but they are all encumbered by dangers and are exposed to the open sea. The NW part of the island is swampy, undulating, and is sparsely covered with scrub.

Joseph Island (53°09'N., 130°02'W.) lies 3.3 miles WSW of Terror Point, the SW extremity of Banks Island. Noot Shoal, usually marked by kelp during the summer, lies about 2.5 miles WSW of this island. Several other dangers also lie between this shoal and Banks Island. McKenzie Shoal, North Danger Rocks, and Nicholas Shoal lie farther NW. They are all located within about 9 miles of the coast of Banks Island.

Grief Point (53°16'N., 130°05'W.), located 7.8 miles NW of Terror Point, is low and wooded. A flat-topped rock, 8.8m high, lies close off this point and is conspicuous from S. Philliskirk Hill, 192m high, stands about 2 miles E of the point and is conspicuous from the S and SW.

Survey Bay (53°22'N., 130°15'W.) lies between the Wreck Islands and Kelp Point, 3.5 miles NW. It is fringed with dangers, which lie up to 0.3 mile offshore, but the middle of the bay is clear.

Anchorage by small vessels with local knowledge can be obtained in a depth of 12m about 0.3 mile NW of the N extremity of the largest of the Wreck Islands.

Stewart Passage lies between Banks Island and those dangers located SE and E of Bonilla Island. These dangers include Carlo Rock, Halibut Rocks, Surge Rocks, East Rock,

and several shoals lying NW and SE of Surge Rocks. The passage is about 2.5 miles wide in the vicinity of Carlo Rock and narrows to a width of 0.5 mile between **Cliff Point** (53°28'N., 130°26'W.) and the dangers to the W. Cliff Point, the S extremity of the Antle Islands, is high and formed of conspicuous, white cliffs.

From a position located about 1 mile SW of Kelp Point, vessels should steer a course of 324° in order to pass about 0.3 mile off Cliff Point. They should then steer to clear Venn Shoal and Lonely Rocks, which lie in the approach to Rawlinson Anchorage.

The tidal currents in the approach channel to Rawlinson Anchorage and at the anchorage set at a rate of 1 to 1.5 knots.

Rawlinson Anchorage (53°35'N., 130°33'W.) lies at the NW end of Banks Island. It forms a safe and easily accessible stopping place for vessels with local knowledge bound to or from the Queen Charlotte Islands by way of Browning Entrance. From seaward, the approach to this anchorage is not easily identified.

The anchorage lies between Banks Island and a large area of islets, rocks, and shoals. Wells Islet and McCoy Rocks, extending NNW, are the outermost dangers in this vicinity. English Rock, located about 0.6 mile NNE of Wells Islet, lies on the N side of the fairway entrance. Webb Rock and Anderson Rock lie on the N side of the fairway and about 0.4 mile and 0.7 mile, respectively, ESE of English Rock. Webb Island, with Johnson Rocks lying close E of it, is located on the S side of the fairway, 0.6 mile E of Wells Islet.

Anchorage can be obtained by vessels with local knowledge in a depth of 22m, sand, about 0.3 mile N of the Isnor Islets. This group of islets lies about 0.7 mile SE of Webb Island. Better holding ground can be obtained in a depth of 14m, mud and sand, about 0.4 mile ENE of Webb Island.

14.8 Griffith Harbor (53°36'N., 130°33'W.) lies at the head of the narrow channel leading NE from Rawlinson Anchorage. The channel, entered E of Anderson Rock, is about 0.8 mile long and less than 90m wide at its narrowest part. There is a least depth of 6m in the channel, lying W of the Jewsbury Islets. These islets are located about 0.2 mile NNE of Kettle Rock, the SE entrance point of the channel.

Laird Rocks, which dry up to 3.4m, lie on the W side of the channel, WNW of the Jewsbury Islets. Deans Rocks, 0.9m high, lies 0.2 mile NE of Laird Rocks and on the same side of the channel. A rock, which dries 6.4m, lies 0.1 mile N of Deans Rocks. Appleby Island is located close NW of this rock.

The narrowest part of the channel is located abreast Deans Rocks. The channel opens out into the harbor above Appleby Island.

Entry, for which local knowledge is essential, is best effected, draft permitting, at or near LW, when most of the dangers are visible.

Anchorage, sheltered from all winds, can be obtained by small vessels, in a depth of 16m, mud, about 0.2 mile NE of the NE end of Appleby Island.

Bonilla Island (53°29'N., 130°37'W.), lying on the NE side of Hecate Strait, is located 4 miles off the NW coast of Banks Island. Dome Hill, 232m high, is the conspicuous summit of the island. The N and S sides of this hill fall away steeply, but on the W side the slope is gradual. The island is surrounded by



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Bonilla Island Light

ledges and rocks. South Rocks, lying about 3.5 miles S of the island, and Northwest Rocks, lying about 3.5 miles N of the island, form the outermost dangers.

A light is shown from the W side of Bonilla Island. A lighted beacon stands on Northwest Rocks.

Porcher Island (53°55'N., 130°30'W.), lying on the NE side of Hecate Strait, is nearly divided into two parts by Porcher Inlet. Porcher Peninsula, at the W end of the island, together with Goschen, Dolphin, and the Spicer Islands form the N side of Browning Entrance.

Bell Range, standing at the NW end of the island, Spiller Range, standing on the NE side of the island, and Egeria Mountain, the summit rising on the SE side of the island, are all conspicuous from Hecate Strait. Anchor Mountain and Mount Shields rise farther inland at the NW end of **Pitt Island** (53°30'N., 129°40'W.).

Laredo Sound

14.9 Laredo Sound (52°30'N., 128°53'W.) lies between Price Island and Aristazabal Island. It is entered from Hecate Strait between McInnes Island and Munro Island, 14 miles NW. The sound gradually narrows to a width of 3.8 miles and then opens out again at its N end. Meyers Passage leads E from the N end, Laredo Inlet continues N, and Laredo Channel leads NW.

The land on either side of the sound is comparatively low with no conspicuous features, except for **Kitasu Hill** (52°30'N., 128°44'W.), which rises on the SW side of Swindle Island. Farther N, on the SE side of Princess Royal Island, stands a high range of mountains. This range includes Mount Learmonth (Learmonth Peak), South Needle Peak (Smyth Peak), and North Needle Peak (Simpson Peak). Mount Johnston, rising near the center of Aristazabal Island, is also prominent.

The tidal currents in Laredo Sound turn near the time of HW and LW, the N current beginning shortly after HW. Tide rips, dangerous for boats, are caused by the S current a few miles to the S of McInnes Island, at the junction of the currents from Laredo and Milbanke Sounds. Tide rips also occur on Moody Banks, especially during S winds.

Vessels bound for Laredo Sound from Hecate Strait should steer for Kitasu Hill, bearing 029°, until abeam of the N extremity of Munro Island. The course should then be altered to 352° in order to pass about 1 mile W of Jaffrey Rock and about 1.3 miles off Haig Rock, which lies at the SW entrance.

Luard Shoal (52°24'N., 128°53'W.), with a least depth of 11m, lies in the middle of the S entrance of Laredo Sound, near the NE end of Moody Banks. It is marked by a lighted buoy.

Nab Rock, which dries 1.5m, lies on the W side of the S entrance to Laredo Sound, about 3 miles SSE of Munro Island.

Shoal depths of 4.6m and 4.9m, over a rocky bottom, lie about 1 mile N of Nab Rock. Oldham Rock, which dries 5.5m, lies about 1.3 miles E of Munro Island. Lempier Bank, composed of rocks and gravel, extends for about 2 miles N. It has a least depth of 13m and lies between 2 miles and 3.3 miles W of Nab Rock.

Prior Passage separates Munro Island and the foul ground fronting its E side from the several islets and rocks lying off the S end of Aristazabal Island. This passage is about 0.2 mile wide and has a least depth of 5.5m. It should be used only by small craft with local knowledge.

Jaffrey Rock, bare and 1.5m high, lies on the E side of Laredo Sound, about 2.3 miles off the NW end of Price Island. Seddall Shoals lie close E of this rock. Another rock, with a depth of 4.1m, lies about 2.8 miles SSE of Jaffrey Rock.

Meyers Passage

14.10 Meyers Passage (52°36'N., 128°44'W.), lying between the N side of Swindle Island and the S extremity of

Princess Royal Island, leads E and then N into Tolmie Channel. Meyers Narrows, at the E end of the S leg of the passage, is less than 0.1 mile wide at its narrowest part and has a least depth of 0.9m in the fairway. Kelp grows thickly in the narrows during the summer and autumn.

Gaudin Rock and Ellard Rock lie off the W entrance of Meyers Passage. Draper Islets lie about 0.4 mile SSW of Wingate Point, the S entrance point of the passage.

Several rocky patches, with least depths of 4 to 13.7m, lie 0.2 mile N and 0.4 mile E of Gaudin Rock. Several more rocky patches, with least depths of 6.4 to 11.9m, extend up to about 0.4 mile W and 0.2 mile N from Ellard Rock. All these dangers lie in the W approach to Meyers Passage.

Kitasu Bay (52°33'N., 128°45'W.), lying S of the W entrance of Meyers Passage, is entered between Wilby Point and Jamieson Point.

The tidal currents in Meyers Narrows attain a rate of 3 knots at springs. The E current begins about 5 hours 30 minutes after HW at Prince Rupert. The W current begins about 1 hour 25 minutes before HW at Prince Rupert.

Parsons Anchorage, at the head of Kitasu Bay, affords good shelter in SE winds to small vessels. The anchorage lies in depths of 27 to 36m, sand and gravel. Drying banks extend about 0.2 mile seaward from the head of the bay.

Anchorage can also be taken by small craft in a depth of 18m, mud, about 0.3 mile SW of the W end of Meyers Narrows.

Vessels bound for Meyers Passage or Kitasu Bay should round Wilby Point at a distance of 1 mile.

Laredo Inlet (52°40'N., 128°45'W.), entered from Laredo Sound, extends 22 miles N into Princess Royal Island. High mountain ranges rise on both sides of this inlet, the most conspicuous of which are Mount Parry (52°53'N., 128°45'W.) and Nares Hills, standing close NE of the head of Trahey Inlet. These peaks are conspicuous from the entrance of Trahey Inlet and from within Laredo Inlet. The prominent peaks rising on the E side of the inlet were previously mentioned with the description of Laredo Sound.

Depths within the inlet are generally deep in the middle and **Burr Rock** (52°52'N., 128°43'W.) is the only danger. There are several small inlets on either side of the main inlet.

Alston Cove, on the E side of Laredo Inlet, has a narrow entrance with a depth of 6.4m. A creek runs into the head of this cove.

Bay of Plenty (Underhill Inlet), on the W side of Laredo Inlet, dries about 1 mile within its entrance and is encumbered by several islets and rocks. Weld Cove, lying S of Bay of Plenty, is sheltered by Pocock Island and Kohl Island. A rock, which dries 0.6m, lies about 0.5 mile S of Kohl Island.

Fifer Cove, on the E side of the inlet, is about 130m wide at its entrance and has a depth of 7.3m. Mellis Inlet lies NW of Fifer Cove, on the W side of the main inlet. It is 2.3 miles long and deep. Two creeks empty into the head of this inlet.

14.11 Brew Island (52°57'N., 128°40'W.), lying at the head of Laredo Inlet, is 238m high. The channels leading on either side of this island are deep.

The principal islands lying on the E side of the approach channel are Aitken, Croft, and Hastings Islands. On the W side of the approach are the Laidlaw and Jessop Islands. Deas Rock,

with two heads, lies about 0.5 mile SSE of Croft Island. Duffy Rock, with a depth of less than 1.8m, lies about 0.3 mile S of the southernmost and highest of the Laidlaw Islands. The foul ground extending SE from this same island is marked by kelp.

Anchorage may be obtained by small craft in Alston and Fifer Coves. Small vessels can also obtain anchorage in a depth of 34m, shells, within the S entrance of Thistle Passage, which separates Hastings and Princess Royal Islands.

Directions.—Vessels bound for Laredo Inlet from Laredo Sound should, when Haig Rock Light bears 308°, alter course NE to bring the S extremity of Croft Island to bear 047°. This course passes midway between Duffy Rock and the W extremity of Aitken Islands. When the S extremity of Laidlaw Islands is abeam to port, the course should be altered to bring Mansell Point, the S extremity of Jessop Island, ahead, bearing 005°. This course should be maintained until the N extremity of Croft Island is abeam to starboard, when the course should be altered NE to pass Hilbert Point in mid-channel. A mid-channel course may be steered up the inlet.

Burr Rock can be passed on either side, but the channel lying E of the rock is preferred as it is the straighter of the two.

Laredo Channel

14.12 Laredo Channel (52°44'N., 129°05'W.), lying between Princess Royal Island and Aristazabal Island, connects Laredo Sound with Caamano Sound to the NW. The coast of Princess Royal Island is steep-to, except for the foul ground fringing the shore between Dallain Point and a point located 3.3 miles NW. The coast of Aristazabal Island is fronted by foul ground that, in places, extends as far as 0.2 mile offshore. The fairway is deep.

Mount Irving (52°46'N., 128°54'W.), rising about 7 miles N of Dallain Point, is a conspicuous cone-shaped peak. Richardson Range stands about 3 miles NW of Dallain Point and about 1.5 miles inland. Mount Gillespie stands about 1 mile inland, 8 miles NW of Dallain Point.

In the wider portions of Laredo Channel, the tidal currents attain a rate of 1 to 2 knots. At the N end of the channel, midway between Ulric and McPhee Points, the N current from Laredo Channel meets the current passing around the N end of Aristazabal Island and at springs, causes dangerous tide rips to occur in this area.

The S current divides in mid-channel off Ulric Point. One portion sets around the NW end of Aristazabal Island and the other sets fairly down Laredo Channel, attaining a rate of 3 to 4 knots in the narrow parts. From abreast the Ramsbotham Islands, the ebb current sets directly S and then along the SW shore, passing across Laredo Sound to Wilby Point, from where it is deflected and sets fairly to the S.

The current changes about the time of HW and LW by the shore.

Haig Rock (52°36'N., 128°55'W.), 6m high and bare, lies about 0.2 mile E of Tildesley Point, at the S entrance of Laredo Channel. A smaller rock lies close N of it.

Walsh Rock lies about 2 miles NNW of Tildesley Point and 0.3 mile offshore. It dries 4m and is marked by a light.

Wilson Rock, with a depth of 2.7m and marked by a large area of kelp in the summer and autumn, lies in mid-channel,

about 4 miles NNW of Tildesley Point. A lighted buoy is moored close ENE of this rock.

On the NE shore, opposite Wilson Rock, is a peculiarly-shaped promontory with sandy beaches on either side of it, the site of an old Indian village. A shoal, with a depth of 7m, lies about 0.6 mile NW of Wilson Rock and is marked by a lighted buoy.

Caution.—Magnetic anomalies were reported (1980) to exist in Laredo Channel, about 2.5 miles WNW of Dallain Point.

A magnetic anomaly was reported (1980) to exist about 0.7 mile SE of Wilson Rock.

14.13 Ramsbotham Islands (52°42'N., 129°02'W.), consisting of three islands and several islets, lie on the SW side of the channel, about 7 miles NW of Tildesley Point. The Louis Islands lie about 1 mile NW of this group.

An abandoned limestone quarry stands on the SW side of the channel, abreast the S end of Ramsbotham Islands. It is conspicuous from the S and E. Kent Inlet, lying on the NE side of the channel, has a least depth of 2.1m in the entrance.

Morehouse Rock (52°46'N., 129°06'W.), with a depth of 1.2m and marked by kelp in the summer and autumn, lies on the NE side of the fairway abreast Helmcken Inlet. A shoal patch, with a depth of 10.6m, lies about 0.7 mile N of Morehouse Rock.

Helmcken Inlet, lying on the NE side of Laredo Channel, is obstructed in its entrance by Smithers Island. The passage lying N of the island dries at LW and the passage lying S has a least depth of 3.7m. Small boats may find shelter in a bight indenting the S shore of Smithers Island. This bight has a depth of 14m.

Evinrude Inlet, lying 1.8 miles NNW of Helmcken Inlet, is entered N of Hawkins Point. A depth of 21.9m lies between the SE shore of the inlet and a shoal, with a least depth of 2.3m, which extends from the NW shore. Farther NE, the inlet widens and deepens. Commando Inlet, entered S of Hawkins Point, has a depth of only 1.8m in its entrance.

Ulric Point, the N extremity of Aristazabal Island, is low and steep-to. Baker Point, located 2.5 miles SE of Ulric Point, is low, conspicuous, and sandy.

McPhee Point, located 5.8 miles NE of Ulric Point, is the NE entrance point of Laredo Channel.

Vessels bound for Laredo Channel from Laredo Sound on a course of about 352°, should, when Haig Rock is about 1.3 miles abeam to port, alter course to the NW and pass midway between Wilson Rock and the coast, 1 mile NE. A course of 309° should then be steered until Shotbolt Point is abeam. Vessels can then steer a course of 330° into mid-channel.

Caution.—A magnetic anomaly was reported (1980) to exist about 1.5 miles WNW of Morehouse Rock.

14.14 Caamano Sound (52°53'N., 129°25'W.) is bounded on the S side by Rennison and Aristazabal Islands and the islets and rocks lying SW of them. It is bounded on the N side by the Estevan Group and Campania Island and on the E side by Princess Royal Island. The main entrance to the sound lies between Rennison Island and Goodacre Point, the SE extremity of the Estevan Group, 9 miles NW.

On the S side of the approach to Caamano Sound, the hills on the N end of Aristazabal Island are the most conspicuous feature, with Mount Parizeau being the most prominent. On the N side of the approach, Mount Pender (53°03'N., 129°25'W.), the bare and dome-shaped summit of Campania Island, is a conspicuous landmark.

The tidal currents in Caamano Sound change at or near the time of HW and LW by the shore. The currents usually begin to set N and into the inlets after the LW.

Aranzazu Banks, with general depths of 15 to 91m, lie in the fairway of the entrance of Caamano Sound, S of the Estevan Group.

Ness Rock (52°50'N., 129°44'W.), awash, lies near the SW end of the banks and has a shoal, with a depth of 9.7m, located close E of it. A rock, with a depth of 8.2m, lies near the NE end of the banks, about 3.8 miles S of the Jacinto Islands.

Spencer Bank, with a least depth of 33m, lies SE of Ness Rock, about 11 miles WSW of Rennison Island.

Yates Shoal, with a depth of 13.7m, lies about 7.3 miles W of the N end of Rennison Island. Evans Rock and Janion Rock lie about 1.3 miles and 1.8 miles, respectively, SSE of Yates Shoal.

Cliffe Rock (52°50'N., 129°28'W.), with a depth of 2.7m, lies on the S side of the fairway, about 3.5 miles W of Rennison Island. Shakespeare Banks lie E of this rock.

Dupont Island (52°56'N., 129°26'W.), high and conspicuous, lies on the N side of the fairway, about 3.8 miles E of Goodacre Point. It is also located at the SW entrance of Estevan Sound. Foul ground fronts the SSE side of the island and extends up to 0.4 mile N of it.

Borthwick Rock, which dries 4.9m, lies about 3 miles WSW of Dupont Island. Cort Rock, with a depth of 2.7m, lies about 1 mile E of this rock.

14.15 Surf Inlet (52°54'N., 129°06'W.), lying at the E end of Caamano Sound, is entered between Johnstone Point and Mallandaine Point, 1 mile N. The inlet, which lies between high hills, is clear of dangers and is deep in the fairway. The only exception is a shoal, with a depth of 4.1m, which lies about 0.2 mile S of Mallandaine Point.

Wearmouth Rock, with a depth of 0.6m and marked by thick kelp in the summer and autumn, lies about 0.5 mile SW of Johnstone Point.

Within the inlet, a conspicuous white cliff stands on the NW shore opposite Argyh Cove. Farther NE, Adams Point is bold and also conspicuous. Adams Bay, lying on the S side of Adams Point, is deep and provides no anchorage.

Penn Harbor, located 1.8 miles NNE of Adams Point, is sheltered from all winds and affords good anchorage for small vessels in depths of 20 to 22m, mud. The narrowest part of the channel is only 55m wide and has a least depth of 11m. Vessels entering the harbor should keep in mid-channel until through the narrowest part. They should then keep on the NW side to the anchorage.

Indifferent anchorage, with limited swinging room, may be obtained at the head of Surf Inlet in a depth of 31m, mud, about 0.2 mile offshore.

Caution.—Caution is necessary as the bottom of the harbor shelves steeply to depths of over 70m.

Racey Inlet (52°53'N., 129°06'W.), lying at the SE entrance of Surf Inlet, is entered between Johnstone Point and Bryant Point, 1.3 miles ENE. Hallet Rock, with a depth of 0.6m, lies in the middle of the entrance. Jay Islands lie close off the SW side of the inlet.

Carne Bay, lying on the NE side of the inlet, is deep with high land rising to the N and a valley located to the E. This bay is not suitable as an anchorage.

A rock, awash, lies on the SW side of the inlet opposite the middle of Carne Bay and close offshore. Another rock, with a depth of 5.5m, lies in the middle of the channel, about 0.3 mile E of the above rock.

Cox Rocks, which dry 0.6 to 4m, lie at the entrance of the narrow channel leading to Bone Anchorage. The fairway leading on the SW side of these rocks is only 155m wide.

Bone Anchorage, lying about 0.8 mile from the head of Racey Inlet, affords anchorage to small vessels in a depth of 32m, mud. A rock, with a depth of 5.5m, lies close W of the NW end of Wale Island. The approach to the anchorage can be made on either side of Hallet Rock. A mid-channel course can then be steered in order to pass NE of the rock, awash, lying opposite Carne Bay and SW of Cox Rocks. The anchorage should not be approached at night or during thick weather.

14.16 Chapple Inlet (52°54'N., 129°08'W.), entered W of Mallandaine Point, is narrow with moderate depths. Sager Islands lie on the N side of the approach to Surf Inlet, about 1.3 miles W of Mallandaine Point. Holler Rock, which dries, lies on the W side of the fairway, about 0.5 mile W of Mallandaine Point. A beacon marks the S extremity of the southernmost of the Sager Islands.

Doig Anchorage, located 1.3 miles N of Mallandaine Point, lies between the coast of Princess Royal Island and Webber Island. The narrowest part of the approach, lying E of the islands to the S of Webber Island, is about 0.6 mile wide and has a least depth of 11.9m. Doig Anchorage affords good anchorage for small vessels in a depth of 29m. Small craft can also obtain anchorage in a depth of 12m about 1.5 miles farther N within a small bay that lies W of the rocky ledge extending N from Chettleburgh Point.

Kiln Bay (52°58'N., 129°09'W.), at the head of Chapple Inlet, is approached W of Baile Island and is entered W of McKechnie Point. Small craft can obtain anchorage in a depth of 20m above the two islets lying on the W side of this bay, but the berth is exposed to SE gales.

Emily Carr Inlet, lying W of Webber Island, is encumbered by rocks and islets and should only be entered by small craft with local knowledge. Holgate Passage, which is foul, lies N of Webber Island.

Estevan Sound

14.17 Estevan Sound (53°04'N., 129°32'W.), lying between the Estevan Group and Campania Island, has a least width of 2.8 miles and is generally deep in the fairway. Vessels proceeding through the sound should give the coast of Campania Island a wide berth. Soundings give assistance in thick weather. Dupont Island, lying at the S entrance of the sound, may be passed on either side. Vessels passing through the channel to the W of Dupont Island should keep close to the

islets located N of it in order to avoid the dangers extending S of the Glide Islands. Vessels should then keep in the fairway, favoring the W shore.

Campania Island (53°05'N., 129°25'W.) has comparatively high mountains, some of which are bare, standing in its SE part. Mount Pender, the summit of the island, is separated from the NW sides of these mountains by a valley in which lie several lakes. From Mount Pender, the land slopes to the NW extremity of the island, which is comparatively low and wooded. The N coast is bold, but the SW is low, wooded, and indented by many small bays and inlets.

The SW shore of Campania Island is fronted by numerous islets, rocks, and areas of foul ground that extend up to about 0.8 mile seaward. None of the inlets and bays lying along this coast are suitable for anchorage, except by small craft with local knowledge.

The **Glide Islands** (52°58'N., 129°29'W.), on the SW side of the sound, lie between 2 miles and 3 miles NW of Dupont Island. The NE part of this group dries.

Blinder Rock, with a depth of less than 1.8m, lies about 0.5 mile S of the Glide Islands and about 1.5 miles NW of Dupont Island. Several rocks, one which dries, lie close N and about 0.4 mile SW of Blinder Rock.

Hickey Islands lie NW of the Glide Islands and off the N entrance of a bay, which is encumbered with numerous rocks, above and below-water. Estevan Reef lies off the S entrance of this bay. Several passages, which have not been completely surveyed, lead NW from the head of the bay.

Cartwright Rocks, lying on the NE side of the sound, are located about 0.5 mile off the coast of Campania Island, SW of Mount Pender. This group consists of one large rock, 8.5m high, and several others, above and below-water, which extend up to about 0.5 mile W and N from it. An isolated shoal, with a depth of 6.4m, lies about 0.5 mile SW of the above large rock.

Logan Rock, with a depth of 4.6m, lies about 0.7 mile SSW of the S extremity of **Jewsbury Peninsula** (53°03'N., 129°28'W.). Another group of rocks, above and below-water, lie about 0.4 mile S of Logan Rock.

A main light is shown from a framework tower standing on a rock, which dries, lying about 0.4 mile SSW of Logan Rock.

Michael Bank, with a least depth of 39m, lies in the middle of Estevan Sound, about 2 miles W of the S end of Jewsbury Peninsula.

14.18 McMicking Inlet (53°03'N., 129°27'W.) is entered W of Mount Pender and E of a chain of islets extending S from the S end of Jewsbury Peninsula. The entrance is encumbered by rocks and shoal patches which are marked by kelp. Numerous other dangers lie in this vicinity.

Betteridge Inlet (53°06'N., 129°30'W.), suitable only for small craft, lies between the N end of Jewsbury Peninsula and Finlayson Peninsula. Numerous islets and rocks encumber the entrance. Clifford Rocks is, a chain of dangers, extends in a NW direction across the W entrance of the inlet. The recommended passage leading into the inlet lies between Hale Islet, located 3.4 miles NW of Mount Pender, and a rock, awash, lying close W of the S end of the islet. This rock is sometimes marked by kelp.

Weinberg Inlet (53°07'N., 129°32'W.), suitable only for small craft, can be approached via Dunn Passage or Anderson

Passage. These channels, which lie S and N of Langthorne Island, are narrow and intricate.

Harwood and Lindsay Bays, lying at the NW end of Campania Island, are open to the SW and too exposed for anchorage. Boyko Rock, with a depth of 5.5m, lies off the entrance to Lindsay Bay.

14.19 Devlin Bay (53°04'N., 129°36'W.), lying on the SW side of Estevan Sound, is located between the Prior and Trutch Islands. The entrance to Gillespie Channel lies at the head of the bay. This channel leads to Hecate Strait via Langley Passage. It is narrow, encumbered with rocks, and should only be attempted at HWS.

An islet, 15m high, lies in the middle of Devlin Bay with a drying rock located close N of it. A rock, with a depth of less than 1.8m, and another rock, which dries 2.7m, lie close N and about 0.2 mile SSE, respectively, of the islet. The bay should be entered N of the islet. A float is moored near the middle of the bay.

Tides—Currents.—The N tidal current enters Campania Sound and divides off Ashdown Island, the greater portion passing up Squally Channel. The lesser portion, passing into Whale Channel, skirts the E coast of Gil Island and unites about 1 mile N of Turtle Point, with the main portion, which entered Wright Sound from Squally Channel via Lewis Passage.

In Casanave Passage, the tidal currents attain a rate of 3 to 4 knots at springs, with some eddies forming in the vicinity of Redfern Point. The currents change about the time of HW and LW.

The tidal currents in the narrowest part of Gillespie Channel attain a rate of at least 7 knots at springs. Slack at HW and LW occur 1 hour 25 minutes and 30 minutes after the time of HW and LW at Prince Rupert. The duration of HWS is from 30 to 45 minutes. The duration of LWS is from 10 to 15 minutes.

Anchorage.—Anchorage can be obtained by small vessels in a depth of 14m close N of the N end of Sekani Island.

Campania Sound

14.20 Campania Sound (53°00'N., 129°15'W.), lying between the SE shore of Campania Island and Princess Royal Island, is deep and free of dangers. This passage, which from the S is entered via Caamano Sound, leads into Squally and Whale Channels at its N end. These channels in turn lead into Wright Sound and the inshore passages.

Duckers Islands (52°56'N., 129°12'W.), lying at the SE entrance of Campania Sound, are located about 0.5 mile off the coast of Princess Royal Island. Numerous dangers lie between these islands and the coast. A rock, with a depth of 6.4m and marked by kelp, lies about 0.4 mile SSE of the southernmost of the Duckers Islands. Another rock, with a depth of 7.3m, lies about 0.1 mile S of the same island.

Murphy Range stands close to the coast, about 4 miles NNE of the Duckers Islands. Mount Cardin, the summit of another range, rises 3.5 miles farther ENE.

Clarke Cove, lying 2.3 miles N of the Duckers Islands, has a depth of only 1.2m in its narrow entrance. A strong tidal current sets through the entrance, which can only be used by boats at slack water.

Seabrook Point, located 2.8 miles N of the entrance to Clarke Cove, is bold.

Alexander Islands (52°57'N., 129°18'W.), located at the SW entrance of Campania Sound, lie about 0.3 mile S of the SE extremity of Campania Island. Several drying rocks lie between these islands.

Dougan Point, located 5.5 miles N of the Alexander Islands, has a bold and conspicuous white cliff on its SE side.

Ashdown Island (53°04'N., 129°13'W.), separated from Princess Royal Island by Casanave Passage, lies at the junction of Campania Sound and Whale Channel. The passage has a least width of 0.5 mile and is deep in the fairway. Barlow Point, the SE extremity of Ashdown Island, is bold and fronted by cliffs. Several islets and dangers lie close off both sides of the passage.

Whale Channel

14.21 Whale Channel (53°10'N., 129°07'W.), lying between the NW end of Princess Royal Island and Gil Island, leads NE from Campania Sound and then N into Wright Sound. It has a least width of 1 mile and is deep in the fairway.

The tidal currents in Whale Channel run at a rate of 3 to 4 knots, the greatest velocity being in the S part.

York Point (53°06'N., 129°10'W.), located on the N side of the channel, is bold. Taylor Bight, lying W of the point, is deep and exposed. A wooded islet lies on the W side of this bight. Allatt Point, the SE extremity of Gil Island, is located 0.8 mile ENE of York Point and is bold.

Borde Island lies on the S side of the channel, about 1.3 miles SE of Allatt Point. This wooded island lies in the middle of the entrance to Barnard Harbor.

Camp Islet lies on the W side of the channel, about 2 miles N of Allatt Point. It is conspicuous and wooded. Shrub Point, located 4.5 miles farther N, is comparatively low and wooded. Leading Point is located on the E side of the channel, about 2.3 miles SE of Shrub Point. This point is surmounted by a conspicuous hill. The River Bight, lying 2 miles NE of Leading Point, is located off the entrance to Cornwall Inlet.

Maple Point (53°17'N., 129°10'W.), the NW entrance of Whale Channel, is comparatively low and wooded. Mount Gil, standing 1.5 miles SSW of this point, is a defined peak.

Barnard Harbor (53°04'N., 129°07'W.), lying on the S side of Whale Channel, affords anchorage within Cameron Cove. The depths in the greater part of the harbor are too deep for a convenient anchorage. The harbor can be approached by either Aikman Passage or Burnes Passage.

Aikman Passage, leading between Borde Island and Claudet Point, has a least width of about 0.1 mile. It is steep-to on either side and deep.

Burnes Passage, leading between Borde Island and Flett Point, is about 0.1 mile wide. It has a least depth of 21.9m in the fairway. The navigable channel lying between the shoals on either side is about 100m wide. Mid-channel courses should be kept through both passages.

Cameron Cove, forming the S part of the W side of Barnard Harbor, is entered between Leighton Point and Goodfellow Point, 0.3 mile SSE. Leighton Point is low, bare, and fronted by a shoal extending on its E side. An islet, 24m high and

wooded, lies on the W side of the cove, about 0.4 mile SW of Goodfellow Point.

Good anchorage can be obtained in the middle of Cameron Cove in a depth of 32m, sand and mud, with the islet, 24m high, bearing 244°.

Caution.—It is reported that considerable magnetic disturbances exist in the vicinity of Aikman Passage and Burnes Passage.

14.22 Squally Channel (53°10'N., 129°25'W.), lying between Campania Island and Gil Island, is the NW continuation of Campania Sound. It has a least width of 2.3 miles and is deep in the fairway. Mount Gil, standing near the N end of Gil Island, is a good landmark.

Violent squalls, which descend from the high land of Campania Island, are often experienced within Squally Channel when calms or light winds and smooth water prevail in Whale Channel.

Skinner Islands (53°06'N., 129°19'W.), three in number, lie on the E side of the channel, about 1.8 miles NW of Fawcett Point. A drying rock lies at the S end of an area of foul ground that extends up to about 0.4 mile SE from the southernmost island of this group.

Lewis Passage (53°16'N., 129°18'W.), lying between Gil Island and Fin Island, affords the best route from the N end of Squally Channel to Wright Sound. It has a least width of 13 miles and is deep in the fairway. The dangers within the passage all lie close inshore. Blackrock Point, the W extremity of Gil Island, is marked by a light. It is located at the junction of Squally Channel and Lewis Passage.

MacDonald Bay, lying 0.5 mile S of Blackrock Point, has a narrow entrance which dries at LW. Crane Bay, lying 2 miles NE of Blackrock Point, is sheltered by Williams Islet, but its depths are too great for anchorage.

Curlew Bay lies W of Plover Point, the NE extremity of Fin Island. Small craft may find anchorage in the entrance of this bay, close SW of Blenkinsop Islet.

Cridge Passage (53°18'N., 129°21'W.), lying between Fin Island and Farrant Island, leads into Wright Sound from Squally Channel. It has a least width of 0.8 mile and has considerable depths throughout. Four islets, located close together along with several drying and below-water rocks, lie on the S side of the passage within 0.2 mile of the N shore of Fin Island. The N side of the passage is steep-to. Block Head, the SE extremity of Farrant Island, terminates in a high, bold, and white cliff. A main light is shown from the SE point of this headland.

Tuwartz Inlet (53°17'N., 129°30'W.), lying on the SE coast of Pitt Island, is entered between Wilman Point and Leggeat Point, 0.5 mile N. The entrance of the inlet is obstructed by an islet, with some bushes on it, and several drying rocks. These dangers lie on a bar, with navigable depths of 18 to 36m, but entry should not be attempted without local knowledge. Within the bar, the depths increase rapidly to over 90m and shoal gradually toward Tuwartz Narrows.

The fairway, about 0.8 mile NNW of Leggeat Point, is reduced in width by some islands and rocks that lie off the W shore.

Tuwartz Narrows is only about 45m wide at its S end and is available to boats at or near slack water.

Union Passage

14.23 Union Passage (53°20'N., 129°25'W.), lying between Farrant Island and Pitt Island, leads from Squally Channel into Grenville Channel. The S entrance lies between Mollison Point and Blossom Point. Ascroft Islet, the southwesternmost of several islets and dangers extending from the coast of Farrant Island, lies about 0.8 mile N of Blossom Point. A shoal, with a least depth of 9.1m, lies about 0.2 mile SW of this islet.

Hinton Island, lying 2 miles NNW of Blossom Point, separates Union Passage from Payne Channel. Hale Point is the S extremity of the long and narrow peninsula located on the W side of this island. A drying reef and foul ground extend up to about 0.3 mile S of Hale Point. Edwards Islet lies off the E coast of Hinton Island.

Payne Channel, lying on the W side of Hinton Island, is about 0.3 mile wide and deep in the fairway. Hoey Narrows, the junction of Payne Channel and Union Passage, lies at the NW end of Hinton Island. The narrows are contracted by an island and a channel with a width of less than 45m leads between it and Hinton Island.

Peters Narrows, a narrow boat passage, gradually contracts Union Passage to a width of only 24m between the 5m curves. The least depth in the fairway is 6.4m. To the N of Peters Narrows, the shores on either side of Union Passage are greatly indented, affording good shelter for small craft in convenient depths. An islet, with a rocky ledge fronting its SE side, lies in the middle of the fairway, about 0.3 mile N of the narrows.

Hawkins Narrows (53°24'N., 129°25'W.), lying at the N end of Union Passage, is located at the junction of Union Passage and Grenville Channel. The S end of the narrows is contracted by several rocks, the northernmost of which has a depth of less than 1.8m.

In Peters Narrows, the tidal currents attain a rate of 7 knots at springs. In Hawkins Narrows, the currents attain a rate of 8 knots at springs.

Otter Passage (53°08'N., 129°46'W.), lying between the N end of the Estevan Group and the SE end of Banks Island, leads E from Hecate Strait into Nepean Sound. A light is shown from the S extremity of Man Island. The passage, about 2 miles wide, is contracted by the dangers lying on either side. The navigable width of the channel is reduced to about 0.3 mile. There are depths in the channel of over 70m.

The conspicuous microwave antennas standing near the summit of Trutch Island are a good landmark from the passage.

The channel leading through Otter Passage is made dangerous by the strong tidal currents. The greater portion of the ebb current finds its way out of Nepean Sound by this passage. At springs, the ebb current attains a rate of 5 to 6 knots, which when meeting the ocean swell at the W entrance, produces a most turbulent breaking sea, dangerous to vessels.

Slack water occurs about 40 minutes before HW and LW at Prince Rupert. The duration of slack water is about 11 minutes.

Caution.—Local knowledge or close attention to the chart is necessary in navigating Otter Passage, as the strong tidal currents and the large number of islands in the passage may be confusing to those vessels not acquainted with the passage.

14.24 Marchant Rock (53°05'N., 129°48'W.), which dries 2.7m, lies about 2.8 miles SW of the entrance of Otter Passage.

Foul ground extends up to about 0.5 mile S from this rock, and a shoal, with a depth of 11m, lies about 1.3 miles NW of the rock.

Man Island and Laithwood Island lie on the N side of the W entrance of the main navigable channel leading through Otter Passage. The areas lying to the N and between these islands is foul. Shoals, with depths of 11m, lie up to 0.8 mile SSE of Laithwood Island.

Two shoals, with least depths of 10.1m and 11m, lie on the S side of the W entrance of the channel, about 1.3 miles S of Man Island.

Block Islands consist of two main islands, numerous islets, and many rocks, above and below-water. This group lies on the N side of the main channel, at the E end. A ridge of foul ground, on which lie several islets, is located on the N side of the channel, almost midway between Man Island and the Block Islands.

Trap Islands, lying on the S side of Otter Passage, are located on a reef of foul ground close off the N shore of Trutch Island. Trap Rocks consists of numerous rocks, both drying and above and below-water. This group is located on the S side of the E end of the main channel.

Nepean Sound (53°12'N., 129°40'W.) is located at the junction of Otter Passage, Estevan Sound, Principe Channel, and Otter Channel. It has general depths of over 140m.

Otter Channel, lying between the N end of Campania Island and the S end of Pitt Island, is the continuation E of Otter Passage across Nepean Sound. It has a least width of 1 mile and depths of over 180m in the fairway.

Marble Rock (53°11'N., 129°33'W.), small and white, lies on the S side of Otter Channel, about 0.5 mile off the NW end of Campania Island.

Principe Channel lies between Banks Island, on the SW side, and Pitt and McCauley Islands, on the NE. It has a least width of 1 mile and depths of 128 to 400m in the fairway. The coast of Banks Island is bold and mountainous. The NE shore of the channel is indented by several bays and inlets, especially near the middle part.

Vessels navigating Principe Channel should keep a mid-channel course until nearing Anger Island, when the SW shore should be closed to avoid the dangers in this vicinity, and also when approaching Bush Islet off Port Canaveral.

In Principe Channel, the NW current is formed principally by the current flowing NW through Estevan Sound that is joined in Nepean Sound by the current which enters through Otter Passage. At the NW end of Principe Channel, this current is met by the NW current which passes outside Banks Island. The SE current runs out principally by Otter Passage. Both currents attain a rate of 2 to 3 knots.

Principe Channel—Southeast End

14.25 Deer Point (53°13'N., 129°45'W.) is located near the SE extremity of Banks Island, at the SW entrance of Principe Channel. It consists of a small peninsula, which from a distance appears to be an islet. Gale Point, located 4.5 miles farther NNW, is high, bold, and prominent.

Joseph Hill, standing 4.5 miles NW of Gale Point, has a prominent and bare summit. Kooryet Bay, lying ENE of Joseph Hill, is partly blocked by islets and rocks, and is suitable only

for small craft. A light is shown from the NE side of Banks Island, 3.8 miles NNW of Kooryet Bay.

Ring Point, located 5.5 miles E of Deer Point, is the NW part of a double headland which forms the SW extremity of Pitt Island and the SE entrance point of Principe Channel. This point is high, bold and conspicuous. Fleishman Point, located 0.8 mile SE of Ring Point, is the SE part of the headland. It is lower and less conspicuous. A lighted buoy is moored about 0.8 mile SW of this point.

Nepean Rock, which dries 2.1m, lies about 0.5 mile SW of Ring Point. Two isolated shoals, with depths of 5.9m and 10.1m, lie 0.2 mile and 0.5 mile, respectively, SSE of Nepean Rock.

Principe Islets, which are wooded, extend up to about 0.4 mile offshore. They lie about 1.8 miles NW of Ring Point. Several other dangers lie in the vicinity of these two islets.

14.26 Monckton Inlet (53°19'N., 129°40'W.), lying on the NE side of the passage, is entered about 6 miles NNW of Ring Point. This inlet, which extends about 4 miles E from Cranston Island, is 0.1 mile wide at its narrowest part and has a least depth of 20.1m in the fairway.

Anchorage can be obtained in depths of 23 to 36m, mud, about 0.2 mile SE of Roy Island, which lies in the middle of the entrance of the arm extending N from the E end of the inlet. Anchorage can also be obtained in depths of 20 to 25m near the head of Monckton Inlet.

Port Stephens (53°20'N., 129°41'W.), lying NW of Monckton Inlet, is entered between Centre Point and Littlejohn Point, 0.4 mile WNW. Littlejohn Point is formed by a high, white cliff. Vessels should keep close to the NW side of the inlet in order to avoid the shoal, with a depth of 8.2m, lying about 0.3 mile N of Centre Point.

Anchorage can be obtained in a depth of 36m at the head of the inlet.

Buchan Inlet (53°22'N., 129°47'W.) lies on the NE side of the passage, about 3.8 miles NW of Port Stephens. This inlet is suitable only for small craft as it is narrow and encumbered with rocks.

Principe Channel—Central Part

14.27 Sewell Islet (53°25'N., 129°53'W.) lies on the NE side of the passage in the approach to Mink Trap Bay. It is 36m high and wooded. A shoal, with a depth of 5.5m, lies about 0.2 mile NNW of this islet. Nesbitt Rock, lying 0.9 mile NNW of the islet, is 24m high and wooded.

Trade Islets, two in number, are 41m and 32m high. They are wooded and lie about 2.5 miles NW of Sewell Islet. These islets, which are joined together by a drying ledge, also lie in the approach to Ala Passage. A rock, which dries 6.4m, lies on the E end of a shoal patch located about 0.5 mile W of the Trade Islets.

Anger Island (53°30'N., 130°00'W.), located on the NE side of Principe Channel, lies in the SE approach to Petrel Channel. Ala Passage, which separates Anger Island from Pitt Island, is encumbered by islets and rocks. This passage is intricate, dangerous, and should only be attempted by small craft with local knowledge.

The SW side of Anger Island is foul and extensive drying ledges extend up to 0.4 mile seaward from it. Ralston Islands, a fairly compact group, lie at the S end of this foul ground. Freberg Islet lies at the N end of the foul area.

Lundy Cove (53°25'N., 129°51'W.), lying on the NE side of Principe Channel SE of Sewell Islet, is narrow and extends E and S for 1 mile. Drying ledges, on which there are a number of islets, obstruct the cove, about 0.5 mile within its entrance.

Patterson Inlet, lying 1.3 miles N of Lundy Cove, is entered between Annie Point and Runge Island, 0.5 mile N. This cove is only about 90m wide at its narrowest part and extends about 2 miles NE from its entrance. The inlet then divides into two arms with small basins at their heads. The channel leading to the inner part of the inlet has depths over 18m. This inlet should only be entered by small craft.

Mink Trap Bay (53°27'N., 129°50'W.) is entered between Runge Island and a point on the opposite shore, 0.6 mile N. Several small islets, connected by a drying reef, lie close W and N of Runge Island. A shoal, with a least depth of 2.7m, lies about 0.2 mile W of the N end of Runge Island. Burns Bay and Moolock Cove lie at the NE end of Mink Trap Bay. The former bay is deep. The latter cove, with a narrow entrance, affords indifferent anchorage to small craft in a depth of 45m.

During SE gales, furious gusts blow over the narrow neck of land separating Moolock Cove from Patterson Inlet.

Hodgson Cove, entered W of Mink Trap Bay, affords shelter for small craft with local knowledge. Numerous islands extend up to 0.5 mile seaward from its shores.

Principe Channel—Northwest End

14.28 Headwind Point (53°31'N., 130°06'W.) is located on the SW side of Principe Channel, about 3 miles W of Anger Island. The coast to Deadman Islet, 15 miles NW, is bold and comparatively unbroken. End Hill stands close to the NE coast of Banks Island, about 2.8 miles SE of Deadman Islet.

Colby Bay, lying 2.5 miles NW of Headwind Point, is a narrow indentation extending about 0.8 mile WSW. Drying banks lie at the heads of the W and S arms of this bay. The bay widens about 0.4 mile within its entrance.

Small craft may obtain confined anchorage in a depth of 9m close S of a prominent point on the S side of the bay. The W side of the entrance should be favored when entering in order to avoid a reef that extend NW from the islet lying on the E side of the entrance.

McCauley Island (53°40'N., 130°15'W.) lies on the NE side of Principe Channel and is separated from Pitt Island by Petrel Channel. Wright Island, 106m high, lies close off Meet Point, the SE extremity of McCauley Island. This island, which is separated from McCauley Island by Dory Passage, forms the dividing point between Principe and Petrel Channels.

Wheeler Island, 56m high and wooded, lies about 1.5 miles W of Wright Island. Several islets and below-water rocks lie within about 0.2 mile of its SE and N sides.

Cliff Islands, two in number, are wooded. They are 59m and 71m high and lie about 0.5 mile W of Wright Island. Sherman Islet, 18m high and also wooded, lies 0.3 mile WSW of the Cliff Islands. Numerous islets, rocks, and shoals lie in this vicinity and within Squall Bay, which is located NW of the

Cliff Islands. The depths in the bay are irregular throughout and no convenient anchorage is afforded.

Alexander Shoal, with a depth of 6.7m, lies about 0.3 mile SSW of Sherman Islet.

Dixon Island (53°34'N., 130°11'W.) lies on the NE side of the channel, 1.5 miles NW of Wheeler Island. The S shore of the island is foul and shoals extend up to about 0.3 mile seaward. Bush Islet, 21m high, lies close off the SW side of the island. Dark Islet, 51m high and wooded, lies 0.2 mile W of Dixon Island. Foul ground, on lies a small islet, extends up to about 0.1 mile S from this islet.

Baird Point (53°41'N., 130°24'W.), the NE entrance point of the NW end of Principe Channel, has low, flat land to the NE. An islet, 29m high, lies close S of this point and on an area of foul ground. Several other shoals lie within 0.3 mile of the point. Keswar Point, located 3 miles SE of Baird Point, is bold and Table Hill stands about 1 mile ESE of it.

14.29 Port Canaveral (53°34'N., 130°09'W.), an inlet, lies on the NE side of Principe Channel. It is located on the W side of the SE extremity of McCauley Island and N of Squall Island. The inlet has irregular depths and is entered between Squall Point, the bold and conspicuous W extremity of Squall Island, and Red Point, which has a reddish-brown cliff, 0.3 mile N.

The inlet is approached from Principe Channel between Wheeler and Dixon Islands, and the shoals between these two islands. Twain Rocks, lying on the E side of the approach, consists of two shoals, each with depths of less than 1.8m. These shoals lie about 0.4 mile S and 0.3 mile SSW of Squall Point. Ethel Rock, lying on the W side of the approach, dries 1.2m and is located about 0.6 mile WSW of Squall Point. Kelp grows on this rock, but is visible only at slack water. A shoal, with a depth of 10.9m, lies about 0.1 mile ENE of Ethel Rock. Another shoal, with a depth of 10.6, lies about 0.1 mile SW of the rock.

Other dangers include Clown Rock, which dries 2.4m, and Globe Rock, 0.6m high, lying about 0.2 mile SE and 0.3 mile WSW, respectively, of Tonkin Point, the SE extremity of Dixon Island. Alarm Rocks, with depths of 3m and 4.6m, lie between 0.1 mile and 0.2 mile NW of Squall Point. A detached rock, with a depth of 3.4m, lies nearly midway between Clown Rock and Alarm Rocks. Canaveral Rock, with a depth of 8.2m, lies about 0.2 mile NE of Squall Point.

Anchorage may be obtained by small craft with local knowledge in depths of 25 to 27m, mud, about 0.2 mile SE of Red Point. The holding ground is good and the anchorage secure.

Petrel Channel

14.30 Petrel Channel, lying between Pitt Island and McCauley Island, leads N from Principe Channel to Ogden Channel. It has a least width of about 0.3 mile and is deep in the fairway. The E shore of the channel is backed by moderately high mountains of which Noble Mountain (53°44'N., 130°09'W.) is the most conspicuous. The W shore is relatively lower.

The channel is entered from the S between Wright Island and Petrel Point, 2 miles ENE. Hevenor Inlet, Newcombe Harbor, and Captain Cove indent the E side of the channel.

Tidal currents, which attain a rate of 3 knots, set fairly through the channel.

Sine Island and Cosine Island lie SE of the entrance of Petrel Channel and in the W approach to Ala Passage. Markle Passage leads N of Sine Island and Evinrude Passage leads S of Cosine Island. Numerous islets, rocks, and dangers lie in this vicinity. Anger Anchorage, lying 1.3 miles NNE of the W extremity of Anger Island, affords anchorage in depths of 43 to 49m. The holding ground is reported to be good.

Allcroft Point is located on the E side of the channel, about 2.8 miles NW of Petrel Point. It is prominent and the intervening coast is indented by a number of coves. The entrance of a creek lies on the W shore of the channel, opposite the entrance of Hevenor Inlet. Between 1 mile and 2 miles N of the creek, a shallow gravel bank, fringed by kelp, fronts the shore.

Hevenor Inlet (53°38'N., 130°03'W.), entered between Stark Point and Hevenor Point, is straight with widths varying from 0.2 to 0.6 mile. The depths vary from about 90m in the entrance to about 21m, 0.1 mile from the head. Hevenor Islet and Clark Islet lie close off the N shore of the inlet.

Anchorage can be obtained by small craft in depths of 18 to 25m at the head of the inlet, close E of two shoals lying SSE of Clark Islet.

Mathers Point is located on the E side of Petrel Channel, about midway between Hevenor Inlet and Newcombe Harbor. It is a prominent headland. Morrison Point is located on the W side of the channel, about 0.8 mile NW of Mathers Point. It is bold and also prominent. Robinson Point, located 1.3 miles NW of Morrison Point, is fronted by a drying rock. Petrel Channel narrows at this point and turns sharply NW. A conspicuous hill stands about 1.3 miles W of Robinson Point.

14.31 Newcombe Harbor (53°42'N., 130°06'W.), lying on the E side of Petrel Channel, is entered close E of McCutcheon Point. The entrance is about 90m wide. A shoal, with a depth of 7m, lies close S of McCutcheon Point. A conspicuous point, fronted by two islets, is located on the NW side of the harbor, nearly 1.3 miles within the entrance.

Anchorage may be obtained by small craft in a depth of 14m about 0.2 mile SW of the above conspicuous point and in mid-channel.

Elbow Point is located on the NE side of Petrel Channel, about 4 miles WNW of McCutcheon Point. It is bold and steep-to. The channel turns N at this point. A gravel bank, which dries, fronts the shore and lies between 0.5 mile and 2 miles N of Elbow Point. A small boulder-filled indentation lies on the W side of the channel, about 1 mile WNW of Elbow Point.

Strouts Point, located 4.5 miles NNW of Elbow Point, is the NE extremity of McCauley Island. Petrel Channel widens at this point and turns sharply W to its junction with Ogden Channel.

Captain Cove (53°49'N., 130°13'W.), lying on the E side of Petrel Channel, is entered N of Captain Point. It is a good harbor, sheltered from all winds. About 0.5 mile within the entrance, the fairway is reduced to a width of 0.1 mile between

the N shore and a group of islets. There is a least depth of 25.6m in the fairway.

Anchorage may be obtained in depths of 21 to 23m, mud. The berth is located with the SE tangent of an islet, 25m high and lying 0.7 mile E of Captain Point, bearing 240° and a conspicuous boulder, 1.8m high and lying 0.4 mile ESE, bearing 145°. Vessels entering the cove should keep in mid-channel and proceed to the anchorage.

Browning Entrance

14.32 Browning Entrance (53°41'N., 130°30'W.), which is extensively used by tugs with tows when crossing from the Queen Charlotte Islands, lies between Banks and McCauley Islands, on the S side, and Goschen, Dolphin, and Spicer Islands, on the N. The entrance provides a convenient route to the inner passages from Hecate Strait. On its SE side is the NW end of Principe Channel, and at its E end are Beaver and Schooner Passages, which lead into Kitkatla, Petrel, and Ogden Channels. The latter channel joins the principal inshore passage at the N end of Grenville Channel.

In addition to those mountain ranges which are conspicuous from Hecate Strait and which are mentioned along with Porcher Island, there are others that become conspicuous on nearer approach. Oval Hill, on the N end of Porcher Peninsula, is conspicuous, as is **Passage Cone** (53°46'N., 130°24'W.) standing on the E side of Dolphin Island. False Cone, the wooded summit of the largest of the Prager Island, stands 1.5 miles W of Dolphin Island and should not be confused with the Passage Cone.

From the NW, the NW extremity of Banks Island has the appearance of low, bare land fringed with trees. About 3 miles inland, the land begins to rise to thickly wooded hills, about 213m high.

White Rocks (53°38'N., 130°34'W.) are 4m high, white, and conspicuous. They are the outermost of the numerous rocks and wooded islets lying off the NW end of Banks Island. Archie Rock, the southwesternmost danger, lies about 1.5 miles SW of White Rocks and about 1 mile offshore. A light is shown from the N end of the rocks.

Ludlam Rock, with a depth of 5.5m and marked by kelp, lies about 2.5 miles ENE of White Rocks and about 1.3 miles WNW of Deadman Islet, the N entrance of Principe Channel.

Larsen Harbor, lying SE of White Rocks, affords confined anchorage in depths of 3 to 6m to small craft with local knowledge. This anchorage lies between the N end of Larsen Island and the islets located to the W.

Beaver Passage

14.33 Beaver Passage (53°45'N., 130°20'W.), the wider and preferred of the two channels leading into Ogden Channel from Browning Entrance, lies between McCauley Island and the Spicer Islands. It is entered from the SW between Hankin Rock and Ralph Islands.

The fairway is deep. A mid-channel course should be maintained throughout the passage, passing about 0.2 mile SE of Connis Islet to avoid Gurd Rock. When Bully Island Light bears about 014°, the course should be altered to pass midway

between that island and the Kitkatla Islands. A course can then be shaped for Ogden Channel.

The tidal currents in the passage set N and S. In the S approach and the N entrance, the currents attain a rate of 2 to 3 knots. Within the passage, they attain a rate of 3 to 4 knots. The duration of slack water is about 13 minutes.

Hankin Rock (53°42'N., 130°25'W.), located at the S entrance of the passage, is fronted by a below-water ledge extending up to about 0.1 mile N from it. Channels lie on either side of this rock, but the one passing to the N side is the preferred. The rock is marked by a light.

A shoal, with a depth of 7.6m, lies about 0.8 mile W of Hankin Rock.

Ralph Islands and Friday Island lie on the N side of Beaver Passage, about 0.6 mile NW and 1 mile NNE, respectively, of Hankin Rock. A rock, 0.3m high, lies between these two islands.

Spicer Island and South Spicer Island are separated from McCauley Island, on the E side, by Beaver Passage and from Dolphin Island, on the W side, by Schooner Passage.

Connis Islet, covered with bushes, lies 0.3 mile SSE of Spicer Point, the E extremity of Spicer Island. A flat-topped rock, which dries 6.1m, lies about 0.2 mile SW of this islet. The islet is marked by a light and a rock, awash, lies about 0.1 mile NW of it.

Gurd Rock, with a least depth of 3.7m, lies on the E side of Beaver Passage, about 0.3 mile SE of Connis Islet. Another rocky shoal, with a depth of 4.3m, lies close SE of this rock.

Connis Cove, lying 0.8 mile ESE of Connis Islet, affords anchorage to small vessels. The berth lies in a depth of 29m about 0.1 mile NE of the small wooded islet located close off the S entrance of the cove.

Bully Island (53°48'N., 130°19'W.) lies at the NE entrance of Beaver Passage, about 1 mile NE of McCauley Point, the NW extremity of McCauley Island. Jock Island, lying 0.5 mile S of Bully Island, is the outermost of the dangers located off McCauley Point. Bully Island is marked by a light.

Kitkatla Islands, a chain of islets and rocks, lie at the junction of Beaver Passage and Kitkatla Channel. The fairway leading between Jock Island and a rock, 0.9m high, lying at the SE extremity of the chain is about 0.6 mile wide.

Schooner Passage

14.34 Schooner Passage (53°46'N., 130°24'W.), lying between the Spicer Islands and Dolphin Island, has a least width of about 0.4 mile. However, the navigable channel is contracted by shoals to a width of only 0.2 mile in places. From the SW, the channel is entered between Christie Islands and the S end of Dolphin Island. Vessels should steer on a course with Letts Islets ahead, bearing 049°. When the SW side of Christie Island is abeam, the course should be altered to pass about 0.2 mile SE of the southernmost of the Letts Islets. Then a course should be steered with the NW extremity of the islet lying off the N entrance of Welham Cove ahead, bearing 023°. When Passage Cone bears 270°, vessels will be clear of the dangers in mid-channel.

Vessels intending to proceed N through Ogden Channel should round the N side of Spicer Island in mid-channel and pass midway between it and the SE extremity of the Kitkatla

Islands. A course of N may then be steered to pass midway between Kitkatla Islands, on the W side, and Jock Island and Bully Island, on the E.

The tidal currents in Schooner Passage attain a rate of 1 to 2 knots in the S entrance and 3 to 4 knots in the N entrance, which is narrower. The currents set N and S.

In Schooner Passage, a drying rock lies on the E side of the fairway, 0.4 mile ESE of Letts Islet. Another drying rock lies 0.2 mile WSW of the islet that separates the two Spicer Islands. A rock, with a depth of 3.7m, lies 0.4 mile NNE of Letts Islets. A rock, with a depth of 3.7m, lies about 0.4 mile NE of Letts Islets and another rock, with a depth of 7.9m, lies 0.2 mile farther NE.

14.35 Christie Islands (53°44'N., 130°25'W.) lie on the E side of the S approach to Schooner Passage, about 0.8 mile WSW of South Spicer Island. Christie Rock, with a depth of 7.9m, lies about 0.3 mile WNW of the southernmost island of the group. Two other shoal patches, each with depths of 8.5m, lie about 0.5 mile and 0.6 mile SW, respectively, of the same island.

Terry Rock, with a depth of 7.3m, lies on the NW side of the S approach to Schooner Passage, about 0.8 mile SW of Boys Point, the S extremity of Dolphin Island. Boys Rock, which dries 4.9m, lies about 0.2 mile S of the same point.

Letts Islets, fringed by foul ground, lie on the N side of the fairway, about 0.8 mile E of Boys Point. Two drying rocks lie on the E side of the fairway, about 0.3 mile ESE of Letts Islets.

Two rocks, with depths of 3.7m, lie in the fairway of Schooner Passage, about 0.4 mile NNE and 0.8 mile NE, respectively, of Letts Islets. Another rock, with a depth of 7.9m, lies about 0.5 mile farther NE.

Browning Island lies on the W side of the N entrance of Schooner Passage, close off the NE end of Dolphin Island. A shoal patch, with a depth of 13.4m, lies about 0.3 mile SE of Browning Island, and another patch, with a depth of 9.1m, lies about 0.1 mile S of the same island.

Small craft may find shelter in a small cove lying S of Shibasha Island, which is located close SW of Browning Island. The narrow passage leading to this small cove has a least depth of 4.6m.

Shaman Cove and Totem Inlet, located on the SE side of Dolphin Island, offer shelter to small craft with local knowledge. The former is encumbered with rocks and the latter is entered via a narrow passage with a least depth of 8.2m in the fairway.

Willis Bay

14.36 Willis Bay (53°48'N., 130°32'W.), lying on the SE side of Goschen Island, affords good shelter during W winds. The bay is approached from the SW through a deep channel leading between Goschen Island and the Prager Islands and Moore Island. The Shakes Islands, lying between Goschen Island and Dolphin Island, are joined at LW by drying ledges. No attempt should be made, even by small craft, to pass between this chain into Kitkatla Channel.

The approach, which offers no difficulty in clear weather, can be made by steering on a course with the NW extremity of Moore Island ahead, bearing 054°. This course leads in mid-

channel and clear of the foul ground fringing the SE shore of Goschen Island. When the S entrance of Willis Bay bears 000°, the course should be altered to pass about 0.2 mile W of Moore Island. Then the S entrance of the bay can be rounded at a prudent distance, avoiding the foul ground and a shoal, with a depth 11m, lying off it. A course may then be set for the anchorage.

Vessels may obtain anchorage, in a depth of 36m, in the middle of the bay.

Freeman Passage (53°50'N., 130°37'W.), which leads from Hecate Strait into Kitkatla Channel and Inlet, lies between the NW side of Goschen Island and the islands and rocks located off the SE end of Porcher Peninsula. The fairway of this narrow and intricate channel has a least width of 90m, between the dangers lying on either side. This passage, in which the tidal currents are estimated to attain a rate of 3 to 4 knots, should be attempted only by small craft with local knowledge.

The mountains of Goschen Island, the only high land close to the sea in this area, are useful in locating the entrance to Freeman Passage. The peak, rising 2 miles NNW of the S extremity of Porcher Peninsula, is a good landmark during fair visibility. It is covered with small scattered patches of green timber.

Joachim Point, the W extremity of Goschen Island, is low and has a small islet lying close off its end. A shoal, with a depth of 10.3m, lies about 1 mile SW of this point. Joachim Spit, consisting of sand and drying boulders, extends about 0.7 mile NW from a position located close NE of the point. Shoals, with depths of less than 11m, lie up to about 0.1 mile seaward of the end of the spit and the channel narrows to a width of about 180m.

The channel hugs the NW shore of Goschen Island and passes S of Absalom Island, Coquitlam Island, and the islets and dangers fringing them.

Kitkatla Channel

14.37 Kitkatla Channel (53°47'N., 130°22'W.) leads between Porcher Island and several other islands lying off its S extremity, on the NE side, and Spicer, Dolphin, Shakes, and Goschen Islands, on the SW side. The channel leads into Kitkatla Inlet and Porcher Inlet. It is entered between the SE extremity of the Kitkatla Islands and the N shore of Spicer Island. Generally, the depths in the fairway are deep. The channel has a least width of 0.4 mile between Browning Island and a drying rock lying off the SW end of the Kitkatla Islands.

Vessels proceeding NW through Kitkatla Channel from Schooner Passage should pass close around Browning Island if the flood current is running in order to avoid being set on to the rocks located at the SW extremity of the Kitkatla Islands.

Gasboat Passage (53°49'N., 130°23'W.) separates the Pelham Islands, which lie close N of the Kitkatla Islands, from the SE end of Porcher Island. Gilbert Island lies at the E end of the Pelham Islands and Ewart Island lies at the W end. Billy Islands lie 0.8 mile NNW of Ewart Island and **Gladstone Islands** (53°50'N., 130°27'W.) are located close NW. These islands lie on the W side of the entrance to Billy Bay, the approach to which is encumbered by rocks. Billy Bay is suitable only for small craft with local knowledge.

Kitkatla (53°48'N., 130°26'W.), a settlement, stands on the N shore of Dolphin Island. A mission and a large church, the spire of which is conspicuous, are situated at this settlement.

Anchorage can be obtained by vessels of moderate size in the vicinity of the settlement. The berth lies in depths of 18 to 32m, 0.3 mile NW of the point on which the settlement stands.

An isolated rock, with a depth of 8.5m, lies on the S side of Kitkatla Channel, about 0.9 mile NW of Kitkatla.

Chief Point (53°50'N., 130°30'W.), located on the N side of Kitkatla Channel, is the SW extremity of a small peninsula, which is low except for the hill standing near its end.

Cessford Islands lie on an extensive area of foul ground extending NW from Chief Point. Two rocks, which dry, lie on the NE side of the fairway of Kitkatla Channel, about 0.3 mile NW of Chief Point. Another rock lies about 0.2 mile farther NW.

On the SW side of the channel there are three reefs, each of which is marked by kelp. These reefs have depths of 3.7 to 5m and lie about 0.3 mile off the coast of Goschen Island.

Sheltered anchorage may be obtained by small vessels with local knowledge in a depth of 12m about 0.3 mile ENE of an islet, 33m high, which lies at the NW end of the Cessford Islands group.

14.38 Kitkatla Inlet (53°55'N., 130°35'W.), lying in the SW part of Porcher Island, is entered NW of Nubble Point, the N extremity of Goschen Island. This inlet is approached via Kitkatla Channel or Freeman Passage, the latter being limited to small craft because of the dangers in it. Depths in the inlet are generally less than 45m over a mud bottom. Anchorage in convenient depths may be obtained by vessels of any size almost anywhere.

Gurd Island lies in the center of Kitkatla Inlet and divides it into two main channels. Ness Islands lie in the entrance of the inlet on an area of foul ground. A reef, with a depth of 2.7m and marked by kelp, lies at the SW extremity of this foul ground. A rock, 2.4m high, lies at the E edge of the foul ground and another rock, which dries 1.2m, is located at the N edge of the area.

Winter Rock, 2.7m high, lies about 1 mile NNW of the Ness Islands. Drying rocks and foul ground extend E and SE from this rock. The channel leading along the SE coast of Gurd Island to the NE part of Kitkatla Inlet has a least width of 0.3 mile located W of Winter Rock.

The SW shore of Gurd Island is indented and fronted by foul ground. The area lying between the NW side of Gurd Island and the shore of Porcher Peninsula, to the NW, is foul.

Porcher Inlet (53°57'N., 130°27'W.), entered N of Whiteley Point, is encumbered by numerous dangers and should be attempted only by small craft with local knowledge at or near HWS. At Porcher Narrows, about 2.3 miles NE of Whiteley Point, the navigable channel is less than 90m wide. The tidal currents in the narrows attain a rate of 5 to 7 knots.

Ogden Channel

14.39 Ogden Channel (53°52'N., 130°18'W.), lying between the SE shore of Porcher Island and the NW shore of Pitt Island, leads NNE from the junction of Beaver Passage and

Petrel Channel. The S entrance of the channel lies between Comrie Head and Sparrowhawk Point, 1.8 miles W. The channel is deep and the fairway is free of dangers.

The channel leads N to Grenville Channel and Arthur Passage, which are part of the main inner passage. The N entrance of the channel lies between Rippon Point and Peninsula Point, 1.8 miles NW.

The N tidal current sets into Ogden Channel and divides near the N end. One part turns SE into Grenville Channel and the other continues N towards the Skeena River and Chatham Sound. The reverse tidal currents from Grenville Channel, the Skeena River, and Chatham Sound unite off the N end of Ogden Channel and pass through it. The muddy water from the Skeena River can usually be distinguished against the blue water of the channel.